Case Reports

Precipitation of Acute Intermittent Porphyria by Chloroquin

A.S. Puri
K.K. Rawal
R. Gupta
S.L. Broor

Acute intermittent porphyria (AIP) is an uncommon disease caused by the deficient activity of the enzyme HMB synthetase (formerly known as PBG deaminase) in the heme synthesis pathway(l). The enzyme deficiency can be demonstrated in most heterozygotes but the clinical expression of this porphyria is highly variable. Activation of the disease is related to external factors. The commonest age of presentation is in the third and fourth decades(2). The disease is rarely seen in children(l-3). We report one such case in which the disease was precipitated following exposure to chloroquin.

Case Report

A 7-year-old Muslim boy was brought to this hospital with a three day history of abdominal pain. Pain was sudden in onset and felt diffusely over the abdomen. No additional information on the character and radiation of the pain could be elicited. Bilious vomiting occurred on the first day but not thereafter. Since the onset of the pain, the patient had not passed stool. Three days prior to the onset of the pain he had developed moderate grade fever for which he was empirically treated with 4 tablets of chloroquin (total 600 mg chloroquin base) at the local primary health centre. There was no history of similar pain, skin or neurologic illness in the past. At the time of presentation patient appeared confused and was disoriented in time and place. No response was elicited to any question posed by the attending doctor. Intermittently he would cry with pain and assume bizarre postures. Vital signs at admission were normal except for tachycardia (120/min). Mild pallor was present. Abdomen was soft on palpation without any organomegaly. Bowel sounds were sluggish; no visible peristalsis was observed. There was no cranial nerve deficit. Motor power was grossly normal in all the limbs. None of deep tendon reflexes (biceps, knee and ankle jerks) were elicitable. Sensory examination was deferred due to the confusional state of the patient.

Investigations were as follows: hemoglobin 9 g/dl, total leucocyte count 14,000/ cu mm (polymorphs 72%, lymphocytes 22%), peripheral smear was hypochromic microcytic; serum electrolytes, renal and liver function tests were within normal limits. A plain X-ray of abdomen showed uniformly dilated loops of small bowel with no air fluid levels.

From the Department of Gastroenterology, G.B.Pant Hospital, New Delhi 110 002. Reprint requests: Dr. A.S. Puri, Department of Gastroenterology, G.B. Pant Hospital, New Delhi 110 002.
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Gas was present in the rectum. Urine which turned brown on standing tested strongly positive for porphobilinogen (Watson-Schwartz Test). Nerve conduction studies of median, ulnar, common peroneal, posterior tibial and sural nerve done on fifth hospital day were within normal limits. The hospital course was uneventful. Pain subsided after 3 days of conservative treatment with Ryles tube aspiration and intravenous fluids. He was discharged from hospital with the advice that he should not take any drugs without consulting his physician. At follow up two weeks after discharge he was asymptomatic. Subsequently one of his asymptomatic five siblings showed a positive Watson-Schwartz test during family screening.

Discussion

The presence of features of autonomic or peripheral neuropathy in a patient with abdominal pain should raise the suspicion of AIP. Tachycardia, hypertension and ileus are the commonest presenting features of the former whereas motor weakness, parasthesias and areflexia indicate peripheral neuropathy. In this patient the presence of most of these features made us to suspect AIP despite its rarity in children.

In two large series from Europe comprising a total of 269 patients, only 6 (2.2%) were less than 15 years of age at the time of diagnosis(2,3). Barclay reported that till 1974 only 37 cases of AIP in childhood had been recorded(4). Thereafter only anecdotal cases have been reported(5). Since several patients have been symptomatic for many years it is possible that the diagnosis is missed in childhood(4). For unknown reasons AIP remains latent in nearly 90% of individuals with the enzymatic defect. Well recognized precipitating factors are drugs, intercurrent infection and low caloric diets(l,6). In our patient this disease became manifest possibly after the intake of chloroquin.

The issue of safety of chloroquine for use in AIP is of immense importance in regions of the world where malaria is endemic. Previous reports on the basis of which chloroquine was classified as an unsafe drug in AIP were based either on animal models(7,8) or personal communications(9). To the best of our knowledge this is the first clinical report documenting the adverse effect of chloroquine in AIP.

We suggest that patients with AIP proven to have malaria should be treated only with quinine. For *P. vivax* primaquine should be given for radical treatment. Both these drug are considered safe in AIP(9). Patients with AIP should avoid low caloric diets and prolonged fasting as these may precipitate an acute attack. Muslim patients should be explained the risk of fasting in the holy month of *Ramazan.*

Though AIP is rare in childhood, the diagnosis should be considered in patients with bizarre abdominal pains, especially when the urine turns brown on standing. Precipitating factors, such as fasting, drugs and infections should be explained to patients with AIP. Family screening with relatively simple tests should be undertaken to identify further cases.

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